BULLETIN

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TORREY BOTANICAL CLUB.

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Contributions to Canadian Bryology.—No. 3.*

By John Macoun.

Continued from Vol. XVI., p. 90.

Grimmia densa, Kindb. n. sp.

Dicœcious. Plants 2–3 cm. high, densely tufted, coherent, green, at the base brown. Leaves patent, not crisped, muticous (without hairpoint), long-lanceolate, borders reflexed; upper cells short, middle ones sinuous, lower narrower and not sinuous, alar quadrate; costa not winged at back. Capsule elliptical, plicate-rugulose when dry, not costate, yellowish brown, declined upon a 0.6 cm. long, curved and flexuous pedicel; beak long and straight; teeth irregular 2-4-fid. to ⅔, dark red, patent when dry, annulus large, 3-seriate.

On rocks, summit of Mount Benson, near Nanaimo, Vancouver Island, June 3, 1887. Alt. 3,000 feet.

G. heterophylla Kindb. Mss.

On rocks on the mountains between the Nicola and Thompson rivers, at Spence's Bridge, B. C. Alt. 2,500 feet. May 28th, 1889.

Grimmia sarcocalyx, Kindb. Mss.

On rocks on the summit of the mountain between the Nicola and Thompson rivers, at Spence's Bridge, B. C. Alt. 3,500 feet. May 28th, 1889.

Grimmia concinodontoides, Kindb. Mss.

On dry rocks overlooking the Thompson River, at Spence's Bridge, B. C. Alt. 3,500 feet. May 28th, 1889.

Grimmia nivalis, Kindb. n. sp.

Tufts blackish, low and compact. Stems denudate below.

*Owing to lack of space we have been forced to omit nearly all species from Prof. Macoun's list except those described as new by Dr. Kindberg.—[Eds.]

Leaves small, short, ovate-lanceolate, acute, muticous or indistinctly piliferous, flat on the borders, the uppermost and the perichetial ones longer and narrower with a smooth and long hair-point; cells quadrate, chlorophyllose, the lower hyaline, short-rectangular; costa percurrent. Inflorescence dicœcious. Capsule exserted, wide-mouthed when empty, not rugose nor striate; teeth orange, nearly entire, spreading when dry; lid mammillate; pedicel arcuate, elongate, pale. Differs from *G. plagiopodia* in the longer acute leaves and the pedicel very much longer than capsule.

On rocks on the summit of the Gold Range, north of Griffin Lake, B. C. Alt. 7,000 feet. Aug. 10, 1889.

RACOMITRIUM ROBUSTIFOLIUM, Kindb. n. sp.

Differs from *R. Macounii* in the leaves being less crispate, pellucid, more reflexed on the borders, often furnished with a short hairpoint. Capsule oval, striate or plicate when dry; teeth dark purple-brown, deeper cleft, papillose; the beak of the lid *oblique*, needle shaped, very much shorter than the capsule; pedicel slightly curved.

Both these species differ from *R. varium* in the short pedicel and the longer leaves.

Mount Arrowsmith, Vancouver Island, alt. 5,700 feet, July 17, 1887.

RACOMITRIUM BREVIPES, Kindb. n. sp.

Habit of *R. heterostichum* or *R. canescens*. Plants dirty green; branches nodose with numerous short branchlets. Leaves very faintly papillose, ovate-lanceolate, long-acuminate, more or less revolute, hair-point long and rough; cells yellow, the upper short or elongate, the alar distinctly quadrate. Capsule small, oblong-cylindrical with a short oblique beak; pedicel short, 0.5 cm. Peristome not examined.*

On sloping garnetiferous rocks near the summit of the Gold Range, north of Griffin Lake, British Columbia; alt. 6,700 feet. Aug. 8, 1889. Coll. John Macoun. No. 395, Canadian Mosses. *Var. ericoides*, B. and Sch. (Bry. Eu. t. 271).

On rocks at Victoria, Vancouver Island, and at Hastings and North Arm Burrard Inlet, B. C., 1889.

VAR. MUTICUM, Kindb. n. var.

Leaves without a hair-point; cells yellow; costa absent. Barren. On rocks summit of Gold Range, at Griffin Lake, B. C. Aug. 1889.

Scouleria Nevii, C. Mull.

S. aquatica, var. *nigrescens*, Kindb., BULLETIN, xvi. 94.

Abundant on stones in mountain brooks at Sicamous and Griffin Lake, B. C., 1889.

ENCALYPTA LEIOCARPA, Kindb. n. sp.

Habit of *E. streptocarpa*. Monœcious. Tufts large, densely radiculose and fuscous below; the young shoots dark green. Upper leaves patulous, when dry incurved, from a diaphanous base lingulate, obtuse, muticous; lower leaves suberect; costa scabrous at back, not excurrent; perichetial bracts not acuminate, perigonial thick-apiculate. Capsule pale, cylindric, not striate, sometimes with a short apophysis; peristome simple; teeth sublinear, papillose, orange and erect; seta red. Calyptra papillose for its whole length, reaching below the capsule, not fringed, dusky yellow.

On rocks summit of Mount Queest and other mountains in the Gold Range, B. C. Alt. 6,500 feet. August 8, 1889.

Webera albicans, Schimp., var. DEFLEXA, Kindb. n. var.

Differs in the leaves revolute nearly all around, the peristome pale yellow, the lid lower.

On the borders of rich woods, Vancouver Island; also Salt Spring Island, Gulf of Georgia. May 10, 1887.

VAR. MACROSPORA, Kindb. n. var.

Leaves denticulate to the middle; costa excurrent. Spores large, about 0.03 mm.

On the mountains north of Griffin Lake, Gold Range, B. C. Alt. 6,500 feet. August 10, 1889.

Bryum Breidleri, Jur. Mountains north of Griffin Lake in the Gold Range, B. C.

This species and *Webera gracilis* were growing in great profusion where snow had just disappeared. August 10, 1889.

BRYUM DENTICULATUM, Kindb. n. sp.

Differs from *B. pseudotriquetrum* in the leaves being loose, distantly denticulate to the middle, lanceolate-acuminate, reflexed at the base.

In a bog, Roger's Pass, Selkirk Mountains, B. C. August 21, 1885.

B. Donianum, Grev. (Linn. Trans. xv. t. 3).

Allied to *B. capillare*, but differing in the leaves being near

the top of the branches, short-acuminate, slightly or shortly mucronate, the capsule slightly curved, the inner peristome not higher than the outer in a dry state, the spores smaller, about 0.01 mm. long or less.

On rocks at Hastings, B. C. April 11, 1889.

B. hydrophilum, Kindb. Read for *B. hydrophyllum*, BULLETIN, xvi. 95.

B. obconicum, Hornsh. sub-sp. CONSTRICTUM, Kindb. n. sub-sp.

Stem higher; leaves green, larger, narrow-margined above; costa reddish, long-excurrent; capsule larger, constricted below the mouth; spores very small, 0.01 mm. long.

Swamp in the Columbia River Valley at Donald, B. C., July 8th, 1885.

B. pallescens, Schleich., var. LAXIFOLIUM, Kindb. n. var.

Leaves loose, not glossy, long and narrow; upper cells narrow; spores small, about 0.01 mm.

Kananaskis Pass, Rocky Mountains, in damp woods. June 23, 1885.

Var. LONGIFOLIUM, Kindb. n. var.

Leaves dense, glossy, very long-attenuate; upper cells narrow; spores small.

On wet gravelly soil at Morley, Rocky Mountains. June 13, 1885.

B. PERCUMCENTINERVE, Kindb. Mss.

On dripping rocks in a ravine just west of Kamloops, B. C. June 18, 1889.

B. Rauii, Aust. On wet earth at Agassiz, B. C. 1889.

Dr. Kindberg says of this species that it is quite distinct from the European *B. Muhlenbeckii* to which it was referred by Lesquereux and James.

Mnium medium, Br. & Sch., sub-sp. ROBUSTUM, Kindb. n. sub-sp.

Leaves larger than the species, ovate-oblong, more densely denticulate, broadly yellow-margined, the comal scarcely larger than the middle ones; costa yellow. Capsules clustered, 2-4, pale, lid higher, conical, short-apiculate; pedicel shorter than the stem.

On logs and rocks in shaded woods near Victoria, Vancouver Island. June 11, 1887.

ATRICHUM (CATHARINEA) LEIOPHYLLUM, Kindb. n. sp.

Plants erect, simple, naked below, densely foliate above. Leaves smooth, lower very small, upper lanceolate and acute-cuspidate, not margined, the base scarcely broader; borders sharply serrate, with large teeth, the basal only entire; basal cells narrow, the others round-hexagonal, all pellucid; costa percurrent; lamellæ 6, disappearing below the apex, entire or slightly crenulate. Capsule single, long, sub-cylindric, thicker below, slightly curved, constricted at the mouth; lid obliquely rostrate from a conic base; perichetial leaves long-cuspidate with excurrent costa; pedicel bright red. Diœcious.

In damp woods on the lower slopes of Mount Arrowsmith, Vancouver Island. July 18, 1887.

ALSIA MACOUNII, Kindb. n. sp.

Loosely cæspitose, bright green. Secondary stems pinnately divided, branching from the middle; branches crowded, single or rarely pinnate, obtuse, not circinate when dry. Leaves involute above, papillose-dentate at the back, branch-leaves imbricate open-erect, five-ranked, ovate, or oblong obtuse, reflexed below, serrulate above the middle; cells oval-oblong and pellucid, the alar smaller and obscure, sub-quadrate; costa percurrent; upper perichætial leaves sheathing, filiform-acuminate, capsule red, plicate-rugulose, oval-oblong, longer than the pedicel; teeth trabeculate, yellowish inside, papillose; cilia short and smooth; annulus simple, adhering at the long-rostrate lid. Diœcious.

This species is by Lesquereux confounded with the true *Alsia abietina*, by others with *Alsia Californica*. On trees at Sooke, Vancouver Island and on Salt Spring Island; also on rocks at Yoll, B. C. May 17, 1875.

Neckera Douglasii, Hook., var. MACOUNII, Kindb. n var. (*Neckera Macounii*, Kindb. enumer. bryin. exotic).

Differing principally in the leaves less attenuate aud the capsule turgid oval, completely exserted on the long pedicel (not "narrow, half-exserted").

On large boulders between Cathedral Mountain and Mount Stephen, Rocky Mountains; also on trees at Hastings, B. C. and Comox, Vancouver Island.

ANTITRICHIA TENELLA, Kindb. n. sp.

Tufts loose, green; secondary stems irregularly divided; branchlets numerous, the greater number very short. Leaves small, sub-patent or loosely appressed when dry, ovate-acute or

short-acuminate, dentate at the apex, not striate, reflexed to the apex; the greater number of cells short, the inner and middle narrow; costa with 1-2 accessorial branches at the base, disappearing below the apex; perigonial leaves elongate. Diœcious. Female plants unknown.

Amongst *Racomitrium varium* on rocks below the railway bridge over the Nanaimo River, Vancouver Island. April 26, 1887.

PLATYGYRIUM RUPESTRE, Kindb. n. sp.

Plants intricate, cæspitose, pale brownish-green, not glossy. Stems irregularly divided, branchlets short, filiform, not creeping. Leaves small, densely crowded, when dry appressed, open-erect when moistened, scarious and pellucid, not chlorophyllose nor papillose, subovate, acute or long-acuminate, the upper denticulate above, the borders recurved below, sometimes to the middle or above it; areolation in the lower leaves sublinear above, looser at the base, in the upper leaves looser, oblong-linear, in all subquadrate at the borders and at the base; costa none. Diœcious.

The generic position of this plant collected only in a barren state is not yet certainly defined.

On the face of a cliff above the first tunnel at Yale, B. C. May 17, 1889.

HOMALOTHECIUM CORTICOLA, Kindb. Mss.

Cedar Hill near Victoria, Vancouver Island. April 21, 1887.

PSEUDOLESKEA SCIUROIDES, Kindb. n. sp.

Macounia sciuroides, Kindb. enumer. bryin. exot., 1888.

Diœcious. Stems creeping, loosely tufted, irregularly branching. Branches attenuate and incurved; paraphyllia filiform or subulate. Leaves from the ovate base attenuate to a long denticulate point, reflexed on the borders, recurved or straight not striate, most of the cells oblong; costa stout, percurrent. Perichetial leaves ovate-oblong, abruptly attenuate to a filiform or subulate point, not reflexed on the borders; areolation narrower; costa thinner, disappearing below the point. Capsule oblong, suberect or inclined, not striate; pedicel 1-5 cm. long. Spores 0.02 mm. Lid and calyptra unknown. Peristome orange-colored; teeth densely articulate with indistinct longitudinal line, subulate and hyaline-bordered, when dry incurved; segments scarcely shorter or narrower, pertuse in the middle; basilar membrane very short; cilia smooth.

On rocks in the valley of Elk River, Rocky Mountains, B. C., 1883. Dr. G. M. Dawson coll.

PSEUDOLESKEA OLIGOCLADA, Kindb. n. sp.

Allied to *Pseudoleskea atrovirens*. Tufts loose, dark brown, sparingly radiculose. Secondary stems sparingly branched; branchlets distant, short and julaceous; paraphyllia numerous. Leaves appressed when dry, falcate when moist, reflexed on the borders, abruptly attenuate from the short ovate base to the longer, sub-entire acumen, not striate; cells not confluent, short with incrassate walls, oblong-quadrate, only the uppermost narrow; costa stout and very long; perichetial leaves longer, acuminate, scarcely reflexed on the borders; cells narrower; archegonia 10-12, paraphyses few, shorter. Dicœcious. Capsules and male plants unknown.

On damp rocks, Mount Benson, Nanaimo, Vancouver Island, June 8, 1887.

M. Cardot believes that this plant is a variety of *Pseudoleskea atrovirens*.

THUIDIUM (CLADOPODIUM) LESKEOIDES, Kindb. n. sp.

Plants very small; tufts intricate, green, not glossy; stems filiform, irregularly divided, without paraphyllia; branches not attenuate, rootless. Leaves small, loose, erect-spreading, ovate-oblong, acute or short-acuminate, very papillose, not pellucid, erect on the borders, serrate all around; cells rotundate, the alar scarcely distinct; costa percurrent. Barren. Habit of *Heterocladium heteropterum*.

On rocks at Cedar Hill, Vancouver Island, April 21, 1887.

THUIDIUM VANCOUVERIENSE, Kindb. n. sp.

Plants minute, densely and irregularly pinnate, sparingly radiculose, rarely flagelliferous, dark green, not glossy; branches short, very slender. Leaves ovate-deltoid, denticulate above the middle, pellucid, faintly papillose; stem leaves decurrent, at the base reflexed, acute; branch leaves smaller, looser, more concave, oval and obtuse; cells hexagonal-oval, or rhombic, the alar and marginal quadrate-rhombic; costa slender, short, scarcely reaching to the middle. Paraphyllia few or none. Perichetial leaves longer acuminate, cells narrower. Capsule small oblong, sub-erect; pedicel 1 cm. long. Dicœcious.

On rocks on the upper slopes of Mount Finlayson, at Goldstream, Vancouver Island, May 31, 1887.

Camptothecium hamatidens, Kindb., var. TENUE, Kindb., n. var.

Branches longer, filiform, leaves smaller only at the base and hooked-denticulate at the apex. On rocks, Mount Erskine, Salt Spring Island, Gulf of Georgia, May 10, 1887.

BRACHYTHECIUM PSEUDO-ALBICANS, Kindb. n. sp.

Differs from the true *B. albicans* (Neck.), in having the leaves looser, sub-distichous, shorter-acuminate, faintly striate, denticulate all around; the alar cells greater, all the basal cells finally reddish. Barren.

No. 235 Canadian Musci in part. On the sand spit and in woods on the ground at Comox, Vancouver Island, May 5, 1887.

BRACHYTHECIUM LÆVISETUM, Kindb. n. sp.

Habit of *B. populeum*. Plants cæspitose, green and glossy. Stem irregularly ramulose. Leaves close, sub-erect, open, ovate-lanceolate acuminate and acute, sulcate; borders serrulate from the middle upwards; basal cells dilatate; costa long, reaching at least to two-thirds. Capsule small, incurved, oblong; outer teeth hyaline-margined, light brown, cilia short and not appendiculate; perichetial leaves nerveless; lid highly convex not apiculate; pedicel very smooth. Monœcious.

In small quantity on a rotten log in the valley of Eagle River, Craigallachie, Gold Range, British Columbia, July 17, 1889. Coll. J. Macoun. No. 326, Canadian Mosses.

ISOTHECIUM CARDOTI, Kindb. Mss.

On the base of trees in the open woods, Hastings, B. C., also on logs near Victoria, Vancouver Island. A very beautiful species.

ISOTHECIUM MYURCELLUM, Kindb. n. sp.

Tufts very loose, dark green, not glossy. Stems creeping; branches (secondary stems) erect, tree-like and ramose; branchlets curved, attenuate. Leaves of the branchlets appressed when dry, small, ovate, blunt or short acuminate, twice serrate or denticulate all around, smooth, scarcely reflexed on the borders; alar cells round-quadrate, the middle ones narrow, upper rhombic; costa long, three-fourths the length of the leaf. Perichetial leaves nerveless, oblong with a long, denticulate, horizontally patent acumen and narrow cells. Capsule oval-oblong, inclined; segments with a low basilar membrane and two short cilia; annulus double; lid conical acuminate; pedicel smooth. Diœcious.

On decaying logs in woods around Victoria and at Nanaimo River, Vancouver Island, April 26, 1887.

EURHYNCHIUM DAWSONI, Kindb. n. sp.

Stems densely pinnate, not or rarely radiculose; branchlets patent. Leaves green or brownish, not glossy, not or indistinctly papillose, not long acuminate from the broad ovate base, re-

curved on the borders below, long-decurrent, open-erect, denticulate all around, areolation variable, often sub-rhomboidal; costa thick, reaching nearly to the apex. Probably dicœcious.

Allied to *E. hians* and *E. Sullivantii.*

On rocks along the Nanaimo River below the Railway Bridge, Nanaimo, Vancouver Island, April 27th, 1887.

Plagiothecium sylvaticum, var. SQUARROSUM, Kindb. n. var.

This is a distinct variety, presenting a squarrose appearance when dry. On earth at Hastings, Burrard Inlet, B. C., April 27, 1889.

PLAGIOTHECIUM (ISOPTERYGIUM) BIFARICELLUM, Kindb. n. sp.

Plants small, sparingly radiculose, loosely cespitose, dark or blackish green, not glossy. Stems rigid pinnate. Leaves loose, small, spreading, smooth and not striate; stem-leaves at the base broadly ovate-cordate, decurrent, serrulate all around, abruptly attenuate to the filiform, hooked-deflexed and sub-entire acumen; cells narrow, linear, the basal oblong; costa obsolete or reaching to the middle. Dicœcious.

Wet places in woods at Comox, Vancouver Island, May 3, 1887.

A. serpens, L., sub-species COLUMBIÆ, Kindb. n. sub-sp.

Leaves loose, spreading, serrulate all around, costa longer.

On earth in woods at Sicamous, B. C., July 19, 1889.

HYPNUM (CAMPYLIUM) MACOUNII, Kindb. n. sp.

Allied to *Hypnum hispidulum.* Habit of the European *H. Halleri.* Monœcious. Plants small, interlaced in dense brownish-green tufts. Stems pinnate, prostrate, sparingly radiculose. Leaves densely crowded, squarrose-recurved, round-deltoid, short-acuminate, reflexed on the borders of the entire base to the denticulate acumen; alar cells quadrate, pellucid, not numerous, the other short oblong or short lanceolate; costa obsolete or none. Capsule small narrow-cylindrical, slightly curved, annulus simple; basilar membrane low; lid convex, obtuse and not apiculate; pedicel reddish-brown, smooth 2 cm. long.

On earth by springs at Mount Stephen on the Canadian Pacific Railway, Rocky Mountains. Alt. 5,600 feet. July 28, 1885.

Hypnum (*Campylium*) *Sommerfeltii*, Myrin.

On the bases of trees at Hastings and Griffin Lake in the Gold Range, B. C., 1889.

H. (HARPIDIUM) LONGINERVE, Kindb.

In BULLETIN, xvi. 97, this species is described as *Dichelyma longinerve*. Later examinations have shown it to be a true *Harpidium*.

H. (*Rhytidium*) *robustum*, Hook.

Very abundant on the slopes of Mounts Benson and Arrowsmith, Vancouver Island. This is the plant upon which Austin founded *Hylocomium Flemmingii*. He saw neither flowers nor fruit. It was fruiting abundantly in 1887.

H. subimponens, Lesq., var. CRISTULUM, Kindb. n. var.

Hypnum cristulum, Kindb. enum. bryineæ. exot., 1888. Intermediate between *H. fertile* and *H. crista-castrensis*. Stems regularly pinnate, rootless. Leaves green or brownish-green, estriate, filiform-pointed, the point a little shorter than the lanceolate base. Capsule yellow, cylindric narrow, faintly curved, sub-erect; teeth at the base pale yellow, hyaline above; perichetial leaves faintly striate. Probably diœcious.

Quite common on rocks in oak woods around Victoria, Vancouver Island, April 17, 1887.

HYPNUM (DREPANIUM) CANADENSE, Kindb. n. sp.

Intermediate between *H. imponens* and *H. sub-imponens*. Diœcious. Densely cæspitose, yellow or pale green. Stems creeping, densely pinnate-ramulose; branches robust, thick and tumid. Leaves close, falcate, with elongate-ovate or oblong base and short acumen, faintly or not striate, more or less denticulate all around, not reflexed on the borders, larger than in *H. imponens*; cells very narrow, the alar (one or two) large and pellucid, the other basal cells yellow; paraphyllia few, subulate. Perigonial leaves very broad-ovate, abruptly narrowed to a straight subulate point.

No. 314 Canadian Mosses. On rotten logs at the summit level of the Canadian Pacific Railway, near Hecton, Rocky Mountains. Alt. 5,300 feet. July 23, 1885.

H. (LIMNOBIUM) PSEUDO-ARCTICUM, Kindb. n. sp.

Differs from *H. arcticum* in the leaves being crenulate at least above the middle; costa short and double, not reaching to the middle; perichetial leaves short-acuminate, serrulate. Inner peristomal teeth rimose in the middle. Stem sparingly rooting.

On stones in mountain brooks near Sicamous; and in brooks on mountains north of Griffin Lake, B. C., July 8, 1889.

An Enumeration of the Plants Collected by Dr. H. H. Rusby in South America, 1885-1886.—XIV.

(Continued from page 214.)

LOASEÆ.

LOASA CANARINOIDES (Leune et C. Koch) (*Illiaria canarinoides* Leune et C. Koch, Flore des Serres t. 913). This very beautiful vine, supposed by M. Planchon to have been introduced to German gardens from Central America, was found by Dr. Rusby in considerable quantities on the slopes of the Andes near Unduavi, Bolivia, at an altitude of 8,000 feet. His specimens differ slightly from the type of t. 5022 of Bot. Mag., in having blunter petals. Unfortunately all the specimens yet preserved are in flower only.

Loasa heptamera, Wedd. Chlor. And. 218, ex descr. (*L. horrida* Britt. mss.). Near La Paz, 11,000 ft. (663). The same as Mandon's 619.

Blumenbachia lateritia, Hook. f. Same locality (664). The same as Mandon's 618.

TURNERACEÆ.

(Named by Mr. R. A. Rolfe.)

Periqueta cistoides (L.) Meyer; Steud. Nomencl. 724. Falls of Madeira, Brazil (1451).

Turnera odorata, Rich. Act. Soc. Hist. Nat., Paris, 1792, 107. Falls of Madeira (1792).

Turnera Weddelliana, Urb. & Rolfe. Reis, 1,500 ft. (2094); Guanai, 2,000 ft. (2653).

PASSIFLORACEÆ.

(Species of *Tacsonia* and *Passiflora*, determined by Dr. M. T. Masters.)

Tacsonia insignis, Mast. in Gard. Chron. (1873) p. 1112, fig. 239. Near Yungas, Bolivia, 4,000 ft. (2465).

Passiflora fetida, var. *nigelliflora*, Mast. (*Passiflora nigelliflora*, Hook.) Falls of the Madeira, Brazil (2457).

Passiflora tricuspis, Mast. in Flor. Brazil xiii, part 1. (1872), p. 587. Mapiri, Bolivia, 5,000 ft. (928[a] and 496).

Rami compressi asperati. Species adhuc imperfecte cognita. Specimina a cl. Rusby lecta quoad folia omnino cum illis a Bur-

chellio carptis sub numero 6.988-2 conveniunt. Exemplaria tamen manca Gardneri (1631) et Weddell (3025.) a me hic relata paullulum diversa videntur. Sequitur floris descriptio a specimine Rusbyi desumpta:—Flores patelliformes diametro pollicares. Sepala pilosula oblonga ecarinata mutica. Petala sepalis paulo breviora conformia tenuiora albida. Corona faucialis extima filamentosa filis sepalis paulo brevioribus, filis secundæ seriei liguliformibus apice clavatis procedentibus dimidio brevioribus. Corona media procedenti approximata membranacea annularis valde plicata horizontaliter inflexa. Corona infra mediana annularis crassiuscula. Cœt. non visa. Species c. *P. trifasciata* aliquando comparanda.

Passiflora cærulea, L. Sp. Pl. 959. Tacna, Chili. Cultivated (489).

Passiflora triloba, Ruiz et Pavon ; Mast, loc. cit. p. 560. Junction of Rivers Beni and Madre de Dios. (490).

Passiflora coccinea, Aublet; Mast. l. c. p. 605. Junction of Rivers Beni and Madre de Dios. (492.) Yungas, 4,000 ft. (493).

PASSIFLORA RUSBYI, spec. nova. Fruticosa cirrhosa, cirro supra basin deciduo parte residua spinam fingente ramis teretibus sulcato-striatis; petiolis eglandulosis; stipulis * * * foliis circa 6 poll. long. 2¼ poll. lat. membranaceis glabris ovato-lanceolatis acuminatis; floribus racemosis, pedunculo elongato; bracteis foliaceis deciduis lineari-oblongis a flore distantibus; floribus 1½ poll. long. extus aurantiacis puberulis; floris tubo pollicari basi ventricoso superne sensim dilatato; sepalis subcoriaceis oblongis obtusis ecarinatis imbricatis partibus obducatis glabris rubro-aurantiacis; petalis conformibus paulo brevioribus; corona fauciali duplici filis extimis petalis dimidio brevioribus flavidis capitatellis apicem versus tuberculatis; filis interioribus dimidio brevioribus linearibus; corona media e tubo paulo infra medium emergente basi membranacea tubulata superne filamentosa filis subulatis elongatis erectis; gynophoro glabro basi pentagono alato, alis ad parietes tubi ita transeuntibus ut tubus basi quinque locularis evadat; ovario oblongo flavido puberulo; stylis basi a sese remotiusculis; fructu * * *

Junction of Rivers Beni and Madre de Dios, (2089.) *P. spinosæ* Poeppig arcte affinis differt tamen petiolis eglandulosis, coronâ mediana, filamentis basi liberis aliisque notis.

PASSIFLORA NEPHRODES, sp. nov. § *Granadilla*. Fruticosa ramis hirsutis teretibus sulcato-striatis; petiolis pollicaribus eglandu-

losis; foliis 3 poll. long. 2¾ poll. lat, membranaceis cordato 3-lobis lobis ovatis acutis, medio multo majore; stipulis pollicaribus foliaceis dimidiato-reniformibus aristatis grosse serratis; pedunculo * * * bracteis * * * floribus diametro 2 pollicaribus; sepalis oblongis hirsutis cornutis; petalis sepalis parum brevioribus; corona fauciali filamentosa filis extimis petalis parum brevioribus, cæteris numerosissimus brevioribus capitatellis; corona media * * * ovario globoso hirsuto * * * Unduavi, 8,000 ft. (494).

Passiflora? Mapiri, 2,500 ft. (2525). Foliage only collected.

Malesherbsia linearifolia, Poir. Near Valparaiso, Chili (2419).

Carica microcarpa, Jacq. Hort. Schœn. iii. 32, t. 309, 310. Yungas, 6,000 ft. (1764); 4,000 ft. (1766).

Carica? Yungas, 4,000 ft. (1765).

Carica? Junction of Rivers Beni and Madre de Dios (1762).

CUCURBITACEÆ.

Luffa cylindrica (L.), Rœm. Syn. fasc. 2, 63. Beni River (2064). Cultivated and spontaneous.

Melothria Cucumis, Vell. Fl. Flum. i. t. 70. Guanai, 2,000 ft. (2066).

Melothria Fluminensis, Gardn. in Hook. Journ. Bot. i. 173. Junction of the rivers Beni and Madre de Dios (2067).

Melothria Hookeri, Cogn., in D.C. Monog. Phan. iii. 588. Mapiri, 5000 ft. (2065).

Gurania spinulosa (Pœpp. and Endl.), Cogn. Diag. Cucurb. i. 17. Mapiri, 5,000 ft. (2061; 2062); 2,500 ft. (2063); (*Anguria spinulosa*, Pœpp and Endl.)

Gurania? Beni River (2662).

Cayaponia pentaphylla, Cogn. loc. cit. 760? Reis 1,500 ft. (2069).

Cayaponia coriacea, Cogn. in Mart. Fl. Bras. Cucurb. 79. Falls of Madeira, Brazil (497).

Cayaponia Tayuya (Vell.), Cogn. in D.C. Monog. Phan. iii. 772. Mapiri, 5,000 ft. (495).

Cyclanthera pedata (L.), Schrad. Index. Sem. Hort. Gott. 1831. Yungas, 4,000 ft. Cultivated (491).

Cyclanthera Matthewsii, Arn. in Hook. Journ. Bot. iii. 280? Guanai, 2,000 ft. (2071).

Cyclanthera, probably undescribed. Yungas, 6,000 ft. (2059).

CYCLANTHERA (?) RUSBYI, spec. nova. Caulis paulo ramosus, sulcatus, puberulus. Petiolus 8-10 mm. longus. Folia submembranacea, ovata, 8-10 cm. longa, 4-6 cm. lata, acuta vel obtusa, supra papillosa, subtus pubescentia, margine remote denticulata, sinus basilaris late rotundatus. Cirrhi bifidi, graciles, elongati. Pedunculus communis 1-3 cm. longus, multiflorus. Pedicelli 2 mm. longi. Corolla virescens, segmentis triangularibus, acutis, 1 mm. longis. Pedunculus fructiferus crassis, 1-2 cm. longus, striatus. Fructus oblique ovoideus 4-5 cm. longus, 2 cm. crassus. Aculei numerosi, compressi, 1 mm. longi. Yungas, 6,000 ft. (2589); Unduavi, 8,000 ft. (2068). If correctly referred to this genus, appears nearest related to *C. subinermis*, Cogn.

Elaterium Amazonicum, Mart. in Cogn. Diag. Cucurb. ii. 55. Yungas, 6,000 ft. (2070).

ECHINOCYSTIS MACROCARPUS, spec. nova. Caulis sulcatus, sparse villoso-hirsutus. Petiolus gracilis, sulcatus, longe villoso-hirsutus. Folia suborbicularia, 10-15 cm. lata, 5-loba, utrinque puberula, lobis acutis vel acuminatis, sinus basillaris rotundus, 2-3 cm. latis. Pedunculus communis masculus gracilis, sparse villosus, 10-15 cm. longus. Inflorascentia mascula paniculata. Cirrhi ramosi elongati. Fructus sessilis, 5-6 cm. longus, 2 cm. latus, horride aculeatus. Aculei inæquales, majores 2 cm. longi. Rostrum conicum, acuminatum, sparse aculeatum, tomentosum. Yungas, 6,000 ft. (2060). Apparently nearest *E. longispina*, Cogn.

Alsomitra Brasiliensis, Cogn. in Mart. Fl. Bras. Cucurb. 115. Junction of Rivers Beni and Madre de Dios. (547).

BEGONIACEÆ.

Begonia pleiopetala, A. D.C. Ann. Sci. Nat. (4) xi. 121. Unduavi, 8,000 ft. (682).

Begonia Weddelliana, A. D.C. loc. cit. ex. descrip. Yungas, 6,000 ft. (679).

Begonia, related to the preceding. Ingenio del Oro, 10,000 ft. (681).

Begonia, apparently allied to *B. Boliviensis*, A. D.C. Yungas, 6,000 ft. (683).

Begonia fagopyroides, Kunth et Bouché, Ind. Hort. Berl. 1848. Yungas, 4,000 ft. (686).

Indian Bread Root.

An article recently appeared in the "Waterloo Observer," N. Y., which has some botanical interest, relating to a root which the Seneca Indians called *Ooktehaw* a century ago, and from which they made bread. The ground nut, *Apios tuberosa*, was well known, and formed the totem of the potato clan of the Senecas a hundred years earlier. This was the principal edible root of the New York Indians. Mr. Horatio Hale properly considered the word generic, and thought that Ooktehaw bread was made from roots in general. Mr. George H. Harris, of Rochester, N. Y., now thinks differently, and claims that the root in question is a Western plant, which he terms *Psoralea esculenta*, otherwise the Prairie Potato, or Bread Root. I suppose it to be a plant which I have seen, but do not know it by this name, nor do I think any *Psoralea* has been reported in New York. As the root was in common use it could not have escaped the notice of botanists and others, whatever its name. Mr. Harris claims that a similar root was used by the early settlers in the Genesee Valley, and was called *O-ki-tah-ak-gua*, or Bread Root. There may be a mistake both in the meaning of the word and the plant.

The ground nut is not now common, and I do not find it in my list of Onondaga names, but *Oke-ta-ha* appears, applied to the beet, and meaning simply a root. *Ook-ta-ha-wa-ne* is the artichoke, and means Big root. The Cayugas called the turnip *Ok-te-ha*. This will show the generic use of the word mentioned by a prisoner among the Senecas, and, as Mr. Hale supposed, Ook-te-haw bread was that made of any edible root. Of those in use here the ground nut was held in the highest estimation, but it was not the only kind eaten in time of need.

W. M. BEAUCHAMP.

Geographical Distribution of Phlox bifida.

The marked increase in late years of local collectors in the region east of the Mississippi River has tended to greatly increase our knowledge of the geographical range of the native species of this region, especially those that have a tendency to be local in their distribution. As a result, new stations for our rarer plants are constantly coming to light; but yet, with our ever-increas-

ing knowledge in this direction, we are compelled to admit that there are certain species that still must be considered as local in their distribution, and of this class is *Phlox bifida.*

I am inclined to think this species more limited in its geographical range than has been generally supposed.

In fact, I feel justified in concluding that this very distinct *Phlox* is confined to Illinois. The writer would be glad to receive any information that would support or destroy such conclusion.

In Gray's "Flora of North America," its habitat is given as "Prairies of Illinois and Missouri;" but I am inclined to think the Missouri habitat very questionable.

In Tracy's "Catalogue of Plants of Missouri," *Phlox bifida* is included, but no locality is mentioned, and it is inserted on the ground of the Missouri habitat in "Gray's Manual, fifth edition."

From the fact that the species was named by Prof. Beck, who collected in the neighborhood of St. Louis, Mo., at one time, I was led to address Prof. Trelease of that city, with the idea of ascertaining, if possible, its existence in that locality. In answering, he said, in looking over Dr. Engelmann's check-list of Missouri plants, he could find no mention of it, nor was it in Riehl's herbarium of Missouri plants at Shaw's Garden.

It would hardly seem possible that such an enthusiastic and accurate botanist as Dr. Engelmann, with the opportunities of his many years residence in St. Louis, would have overlooked it if native in that vicinity. Though a rare plant in Illinois, it is found in several widely separated localities. Patterson's catalogue gives the following localities: "Common on lake shore, south of Chicago, Babcock; Kankakee County, Hill; Peoria, Brendel; Mason and Cass, Mead; Menard, Hall; Union, Forbes." The lake shore habitat makes it possible that it might extend along the shore either into Indiana or Wisconsin.

It is very abundant in a deep, rocky defile known as "Rocky Glen," about two miles distant from Peoria. It is a profuse bloomer, and in May the steep sides are clothed with the delicate star-like flowers. About a mile distant from this locality it grows more sparingly on a steep, sandy bank. As neither locality is susceptible of cultivation, it would appear as if destined to exist here forever.

FRANK MCDONALD.

Botanical Notes.

New Localities.—Collections made during the past two or three seasons have shown me several instances in which the limits of species as given in the "New Manual" must be extended.

During the summer I collected *Rubus cuneifolius* in the vicinity of Bridgeport, Conn., growing on dry rocky hillsides, and a few miles back in the country, *Callitriche deflexa*, var. *Austini*, by the roadside. Both of these are recorded from New York and should be looked for in Connecticut, but are not mentioned by Gray. *Diodia teres*, is given in the "Manual" as extending from New Jersey to West Illinois, Missouri and Texas. This is quite abundant on the beach at Black Rock, near Bridgeport. Another stray, which I understand is becoming common in the east, is *Plantago Patagonica*, var. *aristata*. This was found at Bridgeport this season.

At Evanston, Ill., last spring, I found a bed of *Plantago Virginica*, which the "Manual" gives as extending from southern New England to southern Illinois and south. It grew in a field near Lake Michigan and if introduced is well established.

Cycloloma platyphyllum occurs rather abundantly in drifting sand in a field near the shore to the south of Evanston.

The latest, and to me the most interesting, find was made near the last of August at Edgemoor in northern Indiana. There I found *Utricularia resupinata* growing in abundance along the edge of a marshy pond. The nearest station, according to the "Manual," is Presque Isle, Lake Erie. L. N. JOHNSON.

Evanston, Ill.

A new Locality for Asplenium ebenoides.—I have to report a locality for *Asplenium ebenoides* which, to the best of my knowledge, has not been reported. The locality is "Culp's hill," Gettysburg, Pa. I found it growing among *Camptosorus rhizophyllus* and *Polypodium vulgare*, which species are abundant there, frequently covering large rock surfaces. *A. ebeneum* also abounds.

S. L. POWELL.

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.

A Distribution of Weeds.—Dr. Halsted, who has made a study of weeds for a number of years, proposes to issue a century of

these pestiferous plants. This collection will be made up from scores of reports of American botanists upon the twenty worst weeds in their locality, and therefore will be representative of the various regions of the United States. In the future it is expected to supplement this collection with one of the seeds of the same species, and continue the work until the weeds of America are fully represented in the economic and other herbaria of the country. While more particularly designed for the agricultural colleges and experiment stations, this collection of injurious plants cannot but be of interest to the general systematic botanist. The price is not yet fixed upon, but will not be far from eight dollars for the first century. Dr. Halsted desires that all who are interested will send their word of encouragment to him. The work is a vast one and entirely one of love for the cause of a better understanding of our weeds by the one who is engaged in the enterprise, namely, Byron D. Halsted, New Brunswick, N. J.

Reviews of Foreign Literature.

Introduction to Fresh-water Algæ, with an Enumeration of all the British Species. M. C. Cooke. (8vo. pp. 334; 13 plates, London, 1890. International Scientific Series).

This is a convenient little laboratory book, giving illustrations of all the genera of fresh-water Algæ known in Britain, and as these are nearly all common to North America it will be found a useful adjunct to Mr. Wolle's publications in this country. The subject is treated in a popular, rather than a strictly scientific manner. Directions are given for the collection and preservation of the plants, their methods of growth and reproduction are described and their phenomena of spontaneous movement commented upon.

Dr. Cooke does not take much stock in the recent classification of Algæ proposed in Bennett and Murray's "Cryptogamic Botany," nor in what he is pleased to call the "dual hypothesis" of the nature of lichens, both of which are denounced in no uncertain language. This and other considerations have induced a scathing review of the book by Mr. Geo. Murray in the "Journal of Botany," for August, in which such useful phrases for

reviewers with a bias are employed that we reproduce some of them here:

"The author of this book," says Mr. Murray, "deserves the highest credit for his good intentions. * * * The plan of the book and the idea of producing it are most creditable to Mr. Cooke, but he should have induced someone else to carry the matter into effect. * * * Over the ground covered by the list of subjects there is, indeed, wanted a good, trustworthy, popular guide. Mr. Cooke would have been the better for such a guide."

In defense of his work, Dr. Cooke contents himself with reprinting Mr. Murray's review in "Grevillea," and pointing out the fact that Mr. Murray is an officer of the Botanical Department of the British Museum, while he, himself, is similarly attached to Kew. N. L. B.

Index to Recent American Botanical Literature.

Abies grandis. A. D. Webster. (Garden, xxxviii. 291, illustrated).

Acrostichum Yatesii, Sodiro. R. P. Luis Sodiro. (Anales Univ. Quito. iv. No. 29).

A new fern, related as *A. succisæfolia*, Thouars, discovered on Mt. Pinchincha, Ecuador, and dedicated to Dr. Lorenzo G. Yates.

Asclepias tuberosa. (Vick's Mag. xiii. 309, 310, illustrated).

Asplenium blepharodes, a new Fern from Lower California. D. C. Eaton. (Zoe, i. 197. Plate VII).

A species allied to *A. parvulum* collected by Mr. Brandegee at Sierra de Laguna in January, 1889, differing from that species in its stouter habit, and especially in its beautifully ciliate indurium, that of *A. parvulum* and other allied species being nearly or quite entire.

Azolla Caroliniana. (Proc. Nat. Sci. Assn. S. I., Oct. 9th, 1890.

At the meeting held on the above date, Mr. Thomas Craig showed specimens collected near Clove Lake, Staten Island, where it had been introduced by Mr. Samuel Henshaw in 1885. The plant is evidently thoroughly established in its northern home.

Barbacenia squamata. J. G. Baker. (Gard. Chron. viii. 408, fig. 81).

Botanical Notes, 1889. J. H. Carruth. (Trans. Kansas Acad. Sci. xii. 43, 44).

Notes on *Vitis palmata, V. æstivalis, Acer nigrum*, which is claimed as a species distinct from *A. saccharum, Polygonum erectum, Physalis lanceolata* and *Quercus tinctoria.*

Bromeliaceæ—New Guatemalan. J. G. Baker. (Journ. Bot. xxviii. 305, 306).

The following are described as new: *Æchmea* (*Hohenbergia*) *Isabellina, Æ.* (*Lamprococcus*) *Donnell-Smithii, Æ.* (*Platyæchmea*) *squarrosa* and *Tillandsia* (*Allardtia*) *sparsiflora*, all from the collections of Capt. J. Donnell Smith.

Bulletin No. XIX, Agricultural Experiment Station, Cornell University. (Pamph. 8vo. pp. 13, Ithaca, N. Y., 1890).

In this bulletin may be found reports upon various fruit blights, and figures representing leaves attacked by *Fusicladium dendriticum, Entomosporium maculatum, Taphrina deformans*, and *Glœosporium venetum.*

Cacti—Among the. C. H. Shinn. (Vick's Mag. xiii. 302-307, illustrated).

An account of the cactus flora of the Southwest, with figures of *Cereus giganteus, C. Pringlei, Echinocactus Emoryi, Opuntia Tuna, O. angustata, O. versicolor* and *Agave Palmeri.*

Cactus Family—The. Gerald Hastings. (Am. Garden, xi. 472-475, illustrated).

Cereus chloranthus, Opuntia Tuna, Pelecyphora aselliformis, var. *concolor*, and fruit of *Cereus Greggii* are figured.

Cactus Landscapes. Geo. Vasey. (Am. Garden, xi. 468-470, illustrated).

Figures are given of *Opuntia Whipplei* and *O. angustata.*

Cactuses In-doors and Out. (Am. Garden. xi. 459-467, illustrated).

This article also includes notes upon several cactus-like *Euphorbias.* The illustrations include *Cereus giganteus, Nopalea coccinellifera, Mamillaria micromeris, M. macromeris, Echinocactus Visnaga, E. Emoryi, E. hexædrophorus, Opuntia Rafinesquii,*

Leuchtenbergia principis, Anhalonium fissuratum, Euphorbia meloformis, Rhipsalis salicornoides, Pereskia Bleo.

Cactuses Under Culture. M. De Loup. (Am. Garden, xi. 470-471, illustrated).

Contains figures of *Cereus nycticaulis* and *Opuntia Ficus-Indica.*

Calochortus Madrensis. J. G. Baker. (Gard. Chron. viii. 391, fig. 78).

Canchalagua (*Erythrea venusta*). C. R. Orcutt. (West Amer. Sci. vii. 45, 46).

Chilenische Tertiærpflanzen. H. Engelhardt. (Abhand. Natur. Ges. Isis, 1890, 3-5).

A list of Tertiary plants from Chili.

Contributions to American Botany. XVII. Sereno Watson. (Proc. Amer. Acad. Arts and Sci. xxv. 124-163. Reprinted).

This includes: I—Miscellaneous notes upon North American plants, chiefly of the United States, with descriptions of new species. *Sisyrimbrium humifusum*, Vahl, is referred to *Arabis* under the same specific name. The following new species are described: *Arabis Howellii*, from Oregon and California; *Streptanthus Lemmoni, S. barbatus, S. Arizonicus* and *S. campestris* from California and Arizona, and a synopsis of the known species of *Streptanthus* given; *Silene multinervia* and *S. Schockleyi* from California; *Trifolium Catalinæ* from Santa Catalina Island; *Astragalus Forwoodii* from the Black Hills; *Vicia Thurberi* from the Rocky Mountains and *V. Hassei* from California; *Eriogynia uniflora* from Montana, and under this a discussion of the relations of the several genera recognized by Maximowicz as distinct from *Spiræa*, maintaining with that author that the Asiatic *Neillia* is distinct from *Physocarpa*, and that "*N. capitata*, Greene, can in no way be separated from the ordinary *P. opulifolia.* His *N. malvacea* also, judging from the characters, appears to be a common form of *P. Torreyi;*" but Dr. Watson has not seen *N. malvacea;* if this view be correct, that the two genera are distinct, and we are inclined to consider it so, then, apparently, the American shrubs must go to the genus *Episcotorus*, Raf., which has priority over *Physocarpa; Eremiastrum Orcuttii*, from Cali-

fornia; *Aster Forwoodii* and *Artemisia Forwoodii*, from the Black Hills; *Lepidospartum latisquamum*, from Nevada; *Hieracium nigrocollinum*, from the Black Hills; *Camassia Howellii*, from Oregon; *Ruppia occidentalis*, from British Columbia.

There are also discussions of a number of the species first characterized by the author in the sixth edition of Gray's Manual.

II. Descriptions of new species of plants, from northern Mexico, collected chiefly by Mr. C. G. Pringle, in 1888 and 1889. Eighty-seven species are here characterized, as well as the following new genera: *Sargentia*, in Rutaceæ; *Rhodosciadium*, in Umbelliferæ, and *Jaliscoa*, in Compositæ. N. L. B.

Coprinus from Montana—Notes on a Species of. J. B. Ellis and B. M. Everhart. (Microscope, x. 129-131, Pl. IV).

A figure and description of *Coprinus sclerotigenus*, found growing from a black sclerotium in sheep manure, near Great Falls, Montana.

Cornus Baileyi. J. M. Coulter. (Garden and Forest, iii. 464, fig. 58).

Distribution of Boracic Acid Among Plants. J. S. Callison. (Journ. Elisha Mitchell Sci. Soc. vii. 14-20).

Drought-Enduring Trees. J. L. Budd. (Garden and Forest, iii. 475, 476).

Notes upon introduced shrubs and trees which have thriven in Iowa during the past three years of short rainfall, when native species hardly held their own.

Elm—The American. (Garden and Forest, iii. 462, illustrated).

Attention is called, in this article, to the type of tree with short lateral branchlets covering the main limbs and trunk.

Epilobium—A New. Wm. Trelease. (Zoe. i. 210, 211).

E. Parishii of the *E. coloratum* group collected by Mr. Parish at San Bernardino, Cal., Nov. 1889, Nos. 2094 and 2095, and by Mr. Brandegee, near Todos Santos, Lower California.

Ferns—Notes on Native. F. H. Horsford. (Garden and Forest, iii. 516).

Notes on *Aspidium cristatum*, and its variety *Clintonianum*, *A. Thelypteris*, *A. aculeatum*, var. *Braunii*, *A. Noveboracense* and *A. fragrans*.

Floras of the United States and British America—A List of the State and Local. N. L. Britton. (Reprinted from the Annals of the New York Academy of Science, Vol. V).

At last students of the geographical distribution of North American plants have a complete index to works of reference on that subject. Considering that all the "notes and short lists of observations" have been excluded, one is astonished at the great number of titles that Dr. Britton has accumulated, there being no less than 791, consecutively numbered. The work is the extension and perfection of the series of papers begun in Vol. VIII. of THE BULLETIN, by Messrs. Gerard and Britton, entitled "Contributions towards a List of the State and Local Floras of the United States." The floras are divided into four classes, lettered from A to D, namely, those of lists without exact localities (205), those giving stations (286), those giving stations with notes or occasional descriptions (174), and descriptive lists (91). A few are not classified. The order of arrangement is by countries, States and counties. Aside from the reference value of this list it furnishes in itself some interesting historical facts.

The six Eastern States furnish 106; five Middle States and D. C., 121; six Southeastern States, 55; seven Southern States, 57; eleven of the Western States, including the Indian Territory, 191; Upper Missouri Region, 12; Rocky Mountain Region, 26; Great Basin Region, 15; Pacific Coast, 66; British America, 123, and Transcontinental Surveys, 10. The largest number credited to single States are New York, 65; California, 48; Massachusetts, 45; Pennsylvania, 30, and Ohio, 28.

Apparently the first list published was No. 232, A "Catalogue of Plants," observed by John Bannister in Virginia, published in London in 1668. The next, by Johannes Clayton, relates to the same region and was published in Leyden from 1739 to 1743. But then it is to be remembered that the Virginia of that day included many of our present States. Other old-timers were one in 1749-53 by Cadwallader Colden, relating to Orange Co. (N. Y.) plants, one by Rev. M. Cutler, Boston, 1785, referring to plants of the Eastern States; Flora Caroliniana by Thomas Walter in 1788, and Muhlenberg's Index to the Flora of Lancaster Co., Pa., published in 1793. Doubtless a critical examination of the

periods when this kind of list-making was most active, and a study of the causative influences, would prove highly interesting and profitable. H. H. R.

Fungi—A Few New. J. B. Ellis and S. M. Tracy. (Journ. Mycol. vi. 76, 77).

Eleven new species are described.

Fungi—New North American. J. B. Ellis and B. M. Everhart. (Reprint from Proc. Acad. Nat. Sci. Phil., July 29, 1890).

Descriptions of one hundred and one species are given, with many interesting criticisms.

Grapes—A Classification of American. T. V. Munson. (Garden and Forest, iii. 474, 475. Also Bull. No. 3, Div. Pomology, U. S. Dept. Agriculture).

In this arrangement the author divides the genus, as recognized by him, into two sections, viz.: Euvitis, Planchon, and Puncticulosis, Munson. The first section is divided into seven series, called respectively Ripariæ, Occidentales, Coriaceæ, Labruscæ, Æstivales, Cordifoliæ and Cinerascentes. Section two is represented by the eighth series only, denominated Muscadiniæ. Twenty-five species are recognized. The following are as new: *Vitis Doaniana*, *V. Arizonica*, var. *glabra*, *V. Girdiana*, *V. Lincecumii*, var. *glauca*, *V. Simpsoni*, *V. Virginiana*, *V. cinerea*, var. *Floridana*, *V. Blancoii* and *V. Munsoniana*, Simp. Interesting and valuable notes are included in regard to hybridization and geographical range and distribution.

Grasses of the Southwest. Plates and Descriptions of the Grasses of the Desert Region of Western Texas, New Mexico, Arizona and *Southern California. Part I.* Geo. Vasey. (U. S. Dept. Agric., Div. Botany, Bull. No. 12, 4to, 50 plates, Washington, 1890).

This is the most extensive contribution towards the illustration and description of our native grasses hitherto issued, and is an exceedingly valuable contribution to botanical science, as well as to that of agriculture. The drawings, made chiefly by Mr. Wm. R. Scholl, are accurate and artistic, most of the species being given natural size and accompanied by enlargements of the flowers. They are reproduced by lithography. From an introductory note we learn that this constitutes one-half of the first

volume of a work to be entitled "Illustrations of North American Grasses." Volume II. is to include the grasses of the Pacific Slope. We hope an extension of the plan may lead to a volume on the Eastern grasses. N. L. B.

Heteropsis Jenmani. D. Oliver. (Ic. Plant. Plate 1949).

A new Aroid, native of British Guiana.

Hollyhock Disease.—A New. E. A. Southworth. (Journ. Mycol. vi. 45-50, plate iii).

The new fungus here figured and described is called *Colletotrichium Althææ.*

Huckleberries and Blueberries—Gaylussacia and Vaccinium sp. E. Lewis Sturtevant. (Trans. Mass. Hort. Soc. for Year 1890, part 1, 17-38).

In a discussion regarding the common names the author says: "I have never yet heard the words Whortleberry and Bilberry used by uneducated country people, and yet these words are given prominence in American cyclopedias and by American authors. The popular method, in New England at least, seems to be to apply the name of Huckleberries to those kinds in which the seeds are prominent in the chewing, and Blueberries to those of other kinds in which the seeds are not noticeable, regardless of the real color." The twenty-one edible species are treated in the author's usual exhaustive manner regarding synonomy, bibliography, common names, etc., both for America and the Old World.

Isaria and an Attendant Pachybasium—Note on a Minnesota Species of. Conway MacMillan. (Journ. Mycol. vi. 75, 76).

Lavatera—Is it an introduced Plant? T. S. Brandegee. (Zoe, i. 188, 190).

Leucophyllum Texanum. C. S. Sargent. (Gard. and For. iii. 488, 489, fig. 63).

List of Native Ferns and Allies Grown at Cinchona. Author—Hart? (Ann. Rept. Pub. Gardens and Plantations of Jamaica, for year ending Sept. 30, 1890, 7, 8).

Læflingia squarrosa. T. S. Brandegee. (Zoe, i. 219, 220).

Madrona—The. (Garden and Forest, iii. 509, 510, illustrated).

An account and figure of *Arbutus Menziesii.*

Medicinischen Pflanzen von Alabama—Die. Carl Mohr. (Pharm. Rundsch. viii. 240-243).

A list of medicinal plants in the orders Ranunculaceæ to Leguminosæ inclusive.

Mucronoporus Andersoni, n.sp. J. B. Ellis and B. M. Everhart. (Journ. Mycol. vi. 79).

Found under bark of an oak log, Newfield, N. J., April, 1890.

North American Sphagna—Contributions to the knowledge of. C. Warnstorf. Bot. Gaz. xv. 127-140, 189-198, 217-227).

It is due to the earnest efforts of Mr. Edwin Faxon that the author has been supplied with an abundance of material for this revision. Twenty-three species are recognized. *S. Garberi* is reduced to *S. compactum ; S. serratum*, Austin, becomes *S. Trinitense*, Muller; *S. riparium*, Angstr. is added; *S. Floridanum* (Austin) Cardot is upheld; *S. acutifolium* is split up into numerous forms and varieties and six of its varieties raised to specific rank; var. *quinquefarium*, Braith., equals *S. quinquefarium;* var. *plumulosum*, Milde, becomes *S. subnitens*, Russ. & Warn.; var. *fuscum*, Sch. is *S. fuscum ;* var. *robustum*, Russ., is *S. Russowii ;* var. *tenellum*, Schpr., is *S. tenellum ;* var. *gracile*, Russ., is *S. Warnstorfii*, Russ.; *S. sedoides* is reduced again to a variety of *S. Pylæsii*, Brid.

Since the distribution of Austin's fine exsiccatæ, the North American Sphagna have been critically studied by Braithwaite, (1880) Lindberg (1882) Lesquereux and James (1884) Cardot (1887) the number of species fluctuating from 16 to 27.

E. G. B.

Notes on the History of Botany. T. J. W. Burgess. (Pamph. 8vo., pp. 19).

This is the author's reprint of an interesting paper read before the Hamilton Association, March 13, 1890.

Opuntia Fruit as Food. Walter Dalton. (Am. Garden, xi. 467).

Pancratium fragrans. (Gard. Chron. viii. 359-360, fig. 71).

Phœnix dactylifera—Germination of. Mrs. J. E. Dixon. (Bull. Sci. Lab. Denison Univ. v. 8, 9, pl. A. f. 1, 2, 3).

Phyllocactus Ackermanni. (Am. Garden, xi. 448, 449, fig. 1).

Potato Scab—A Bacterial Disease. H. L. Bolley. (Agric. Sci. iv. 243-256).

A record of experiments tending to prove that the potato scab is due to the presence of a specific *Bacterium.*

Provisional Host-Index of the Fungi of the United States. Part II, Gamopetalæ—Apetalæ. W. G. Farlow and A. B. Seymour. (pp. 53-133, Cambridge, 1890).

Red Wood—The. (Gard. Chron. viii. 302-304, figs. 60-63).

A popular account of *Sequoia sempervirens*, with notes upon its introduction and growth in Great Britain.

Report of the Chief of the Section of Vegetable Pathology for the Year 1889, *U. S. Dept. Agric.* B. T. Galloway. (Pamph. pp. 35, illustrated. Author's Edition).

In addition to an account of the economic work of the Division there is a description, with colored plate, of a mignonette disease: *Cercospora Resedæ*, Fckl.

Report of the Botanist on the Grasses and Forage Plants and the Catalogue of Plants (of Nebraska). Charles E. Bessey and Herbert J. Webber. (Pamph. 8vo. pp. 162. Lincoln, Neb., 1890. Extracted from the Report of the Nebraska State Board of Agriculture for 1889).

This valuable report contains papers by Mr. Webber on "The Grasses of Central Nebraska" and "The Grasses of Northwestern Nebraska;" on "Grasses of Box Butte and Cheyenne Counties" by Mr. J. G. Smith; by Mr. Webber on the several collections of grasses exhibited at the State Fair held in 1889. The number of wild species is given as 106 and the introduced species 22. There are also papers on a variety of agricultural topics connected with other forage plants.

Mr. Webber contributes the "Catalogue of the Flora of Nebraska." This is arranged in the philosophical manner of beginning with the lower organisms and ending with what the author considers to be the most highly organized—in his case the Compositæ—the arrangement of the Flowering Plants following that of Luerssen. There are 1,890 species and varieties enumerated, curiously coincident with the date of publication. Of these, thirty-nine are Protophyta, ninety-five Zygophyta, twenty Oophyta, 691 Carpophyta, forty-seven Bryophyta, seventeen Pteridophyta and 981 Anthophyta. In nomenclature the oldest specific name is quite consistently maintained and the original author cited in parenthesis. Common names are given in detail and localities cited for all the rarer plants. The list is an exceed-

ingly important contribution to geographical botany, and the thanks of botanists are due Dr. Bessey and Mr. Webber for the labor and care of its preparation. N. L. B.

Report of the Botanical Department of the Experiment Station, Kansas State Agricultural College, for the Year 1889. W. A. Kellerman and W. T. Swingle. (Reprint, pp. 213-364, from 2d Ann. Rep. Exp. Sta.).

This paper consists of (1) Report on the Loose Smuts of Cereals, containing detailed descriptions of *Ustilago Avenæ*, *U. Tritici*, *U. Hordei* and *U. nuda*, illustrated by nine plates. Comprehensive tables of synonymy of these four closely allied species are given. (2) Experiments in Crossing Varieties of Corn, including a bibliography of the subject. (3) Preliminary Study of the Receptivity of Corn Silk.

Results of a Biological Survey of the San Francisco Mountain Region and Desert of the Little Colorado in Arizona. C. Hart Merriam. (North Am. Fauna No. 3, U. S. Dept. Agric. Divn. Ornithol. and Mammal., Pamph. 8vo. pp. 136, illustrated. Washington, D.C., Sept. 11, 1890).

Several important botanical contributions are to be found in this publication. Under the heading "Remarks on the geographic distribution of species characteristic of the several zones of the San Francisco mountain region in Arizona" are lists of plants found respectively on the summit, sub-alpine or timber line zone, (Central) Hudsonian or Spruce zone, (Central) Canadian or Balsam Fir zone, Neutral or Pine zone, and Piñon zone of the mountains. Also a short account of the flora of the Desert of the Little Colorado below. In regard to the origin of the boreal flora of the mountains the author accepts the theory that during the recession of the ice in glacial times these plants were left stranded and as the temperature became warmer and warmer they ascended the mountain until they found a temperature which suited their needs. The desert flora is supposed to have come by way of the Grand Cañon of the Colorado from the deserts of western Arizona—a theory which only an intimate acquaintance with the physical features of the region can criticise. Brief notes upon some of the botanical features of the Grand Cañon are also given. Finally a list of the forest trees is appended, which

enumerates fourteen species and varieties. The work is well illustrated by maps which show the areas and limits of the various zones above mentioned.

Rhododendron Forest in New Hampshire—A. Walter Deane. (Am. Garden, xi. 595, 596, illustrated).

Describes a visit to a forest of *Rhododendron maximum* on the farm of S. M. Follansbee, Fitzwilliam, N. H.

Rose Rusts. A. B. Seymour. (Am. Garden, xi. 609, illustrated).

Description and figures of *Phragmidium mucronatum* and *P. speciosum.* Also *P. mucronatum*, var. *Americanum*, which the author thinks is probably identical with the European *P. Rosæ-alpinæ.*

Sequoia Forests of the Sierra Nevada. Frank J. Walker. (Zoe, i. 198-204, with map).

Mr. Walker estimates that 37,500 acres of *Sequoia* forest remain in the Sierra Nevada, of which about 13,500 are owned or held by the Government.

Some Attractive Native Plants. L. H. B. (Am. Garden, xi. 597-599, illustrated).

Polygala paucifolia, Cypripedium pubescens, Lithospermum canescens, Chimaphila maculata and *Sarcodes sanguinea* are figured.

Spiral or elliptically wound Tracheids in the axilla of small decayed Branches in Trees. P. H. Dudley. (Journ. N. Y. Micros. Soc. vi. 110-114; four figures).

Stinking Smut of Wheat—Preliminary Experiments with Fungicides for. W. A. Kellerman and W. T. Swingle. (Bull. No. 12, Kans. State Agric. Coll. Exp. Sta., Pl. 1).

Contains representation of *Tilletia fœtens.*

Tupelo Tree—The. (Gard. and Forest, iii. 485, 486).

A popular account of *Nyssa aquatica*, illustrated by an engraving of a group in eastern Massachusetts.

Trillium—The Snowy. A. D. Selby. (Journ. Columbus Hort. Soc. v. 36, Pl. iii).

Trillium nivale is described and figured. It is stated to be in full bloom in Ohio in March.

Zonaria variegata, Lam'x—Notes on. Herbert Maule Richards. (Proc. Amer. Acad. Arts. and Sci. xxv. 83-92, one Plate. Reprinted. Contrib. Crypt. Lab. Harvard Univ. xiii).

This is a study of the frond-structure of an alga of the order Dictyotaceæ, collected by Professor Farlow in Bermuda and a discussion of the relation of this genus to *Dictyota*, *Taonia* and *Padina*.

Proceedings of the Club.

The regular meeting was held Tuesday evening, October 14th, with twenty-two persons present, Rev. L. H. Lighthipe in the Chair.

The Secretary presented the following amendment to the Constitution:

Resolved, That Article XXII of the Constitution be changed to read, "The regular meetings of the Club shall be held on the second Tuesday and *last* Wednesday of the month" instead of *fourth Wednesday* as it now stands.

"An account of the Autumn Flora of Southeastern Virginia" was given by Mr. Arthur Hollick, illustrated by specimens. The paper will appear in a later number of THE BULLETIN.

Miss Gaskin reported *Asplenium montanum* at Sam's Point, New York.

The second regular meeting of the month was held Wednesday evening, October 24th, the President in the Chair and twenty-three persons present.

Mr. Frank Johnson was elected an active member, and Dr. Lorenzo G. Yates and Prof. Luis Sodiro were elected corresponding members.

The committee on amendment to Constitution reported favorably thereon.

The paper of the evening "New or Noteworthy North American Phanerogams" was given by Dr. N. L. Britton.

Dr. Wheelock remarked on the two species of *Pentstemon*, *P. frutescens*, of Arctic America, and *P. crassifolium*, Shutt. of Florida, a hitherto undescribed plant.

Miss Stabler reported a peculiar growth of ærial roots in Swamp Maple as noticed by her at Great Neck, L. I. The trees in several instances were decayed 10 or 15 feet above the ground, and roots 1½ inch in diameter had been sent out from above through this decayed growth to the ground 15 feet below.